

725.d.27  
23.  
SOME PAPERS

Relating to the General Draining

O F

MARSH-LAND

I N T H E

County of Norfolk.

W I T H

Mr. *Berners's* OBJECTIONS  
and PROPOSALS.

As also,

An Answer to those OBJECTIONS and PROPOSALS, &c.

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By PETER BATESON.

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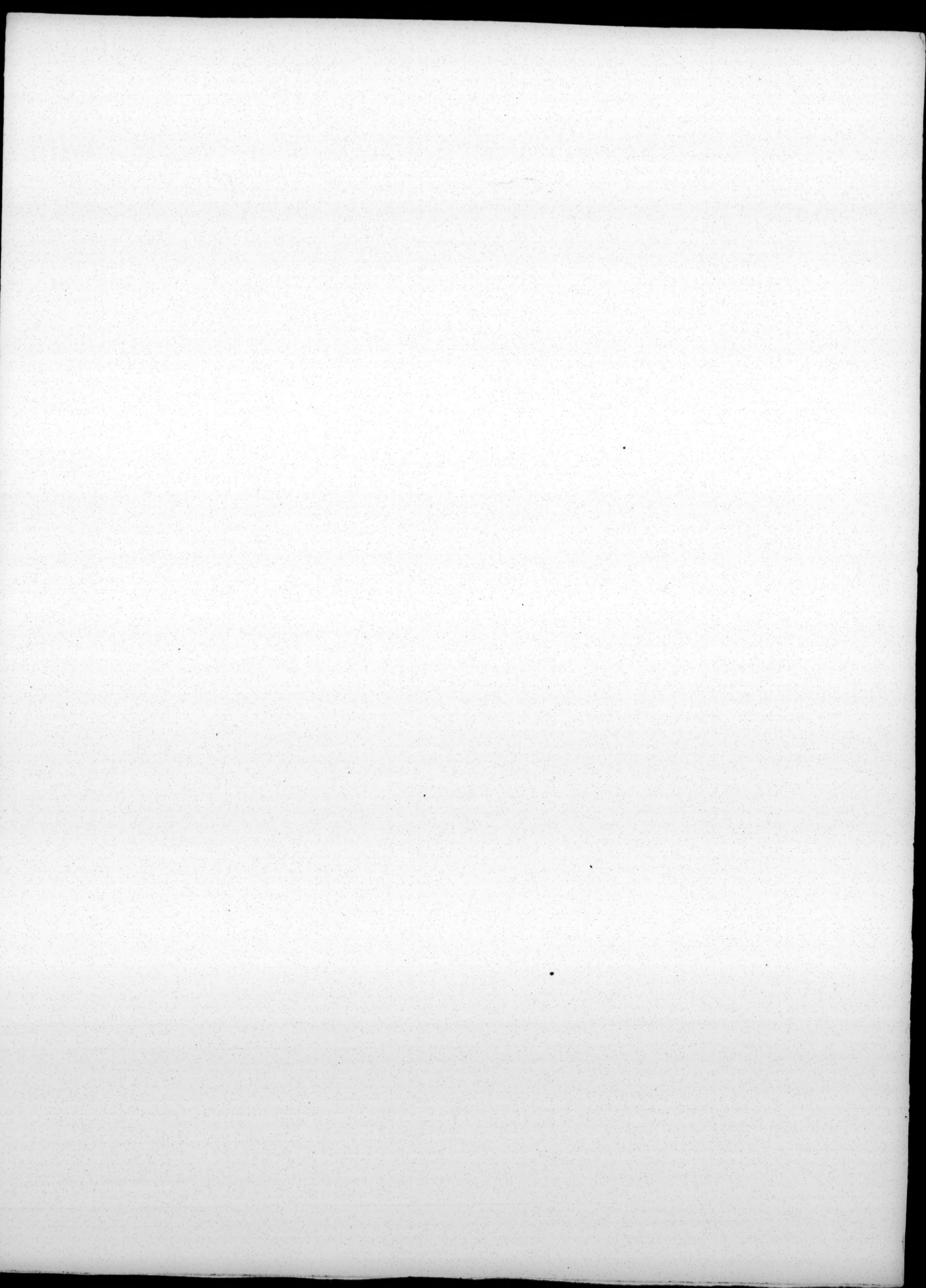
*Favete, adeste aequo animo, & Rem cognoscite,  
Ut pernoscat, ecquid spei sit reliquum. Ter. Prol. Andr.*

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Printed in the Year 1710.

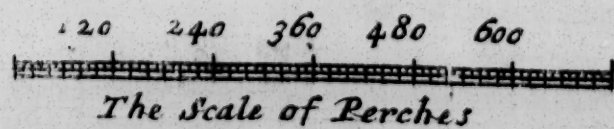
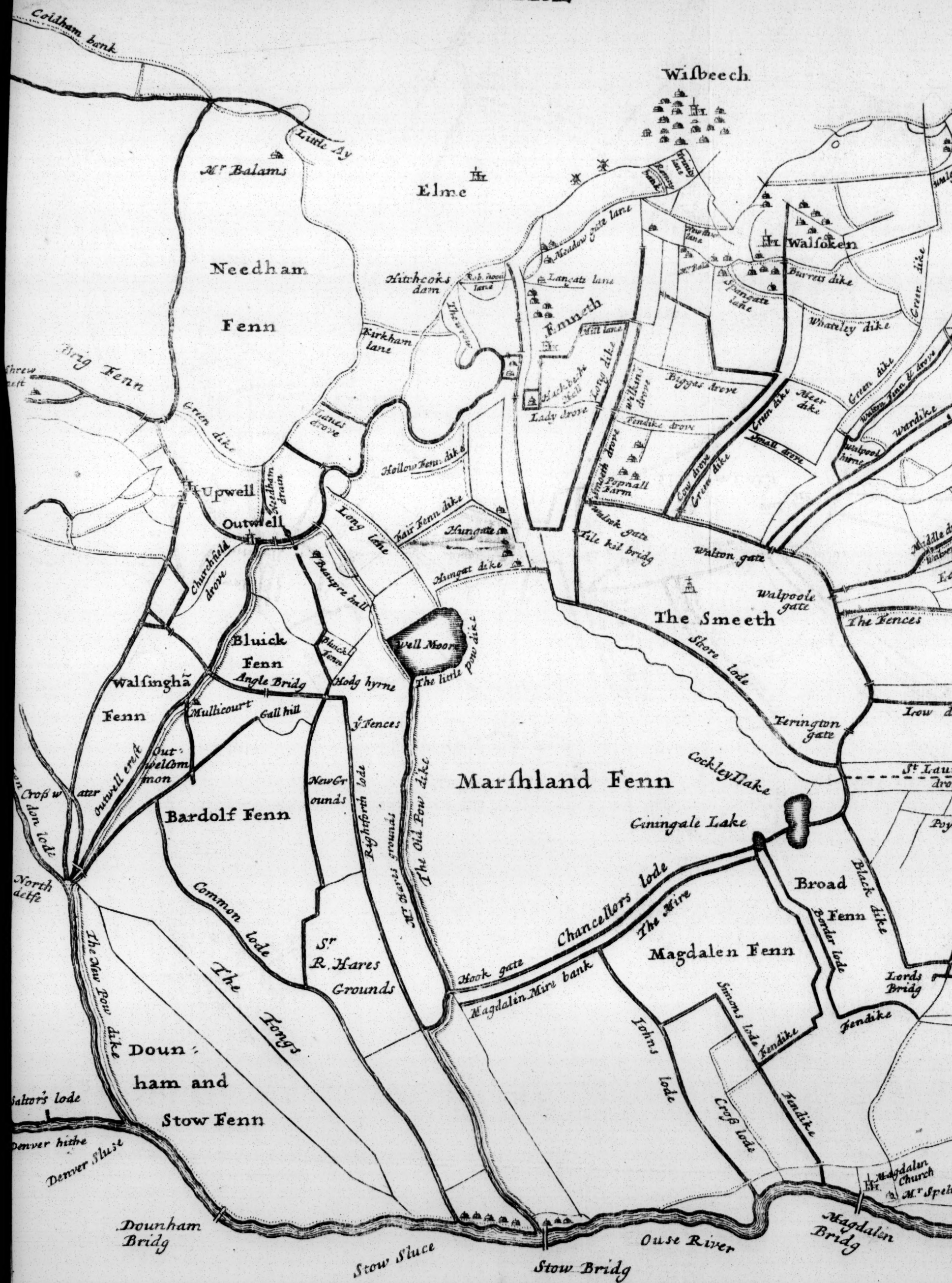








# PART OF CAMBRIDG SHIRE



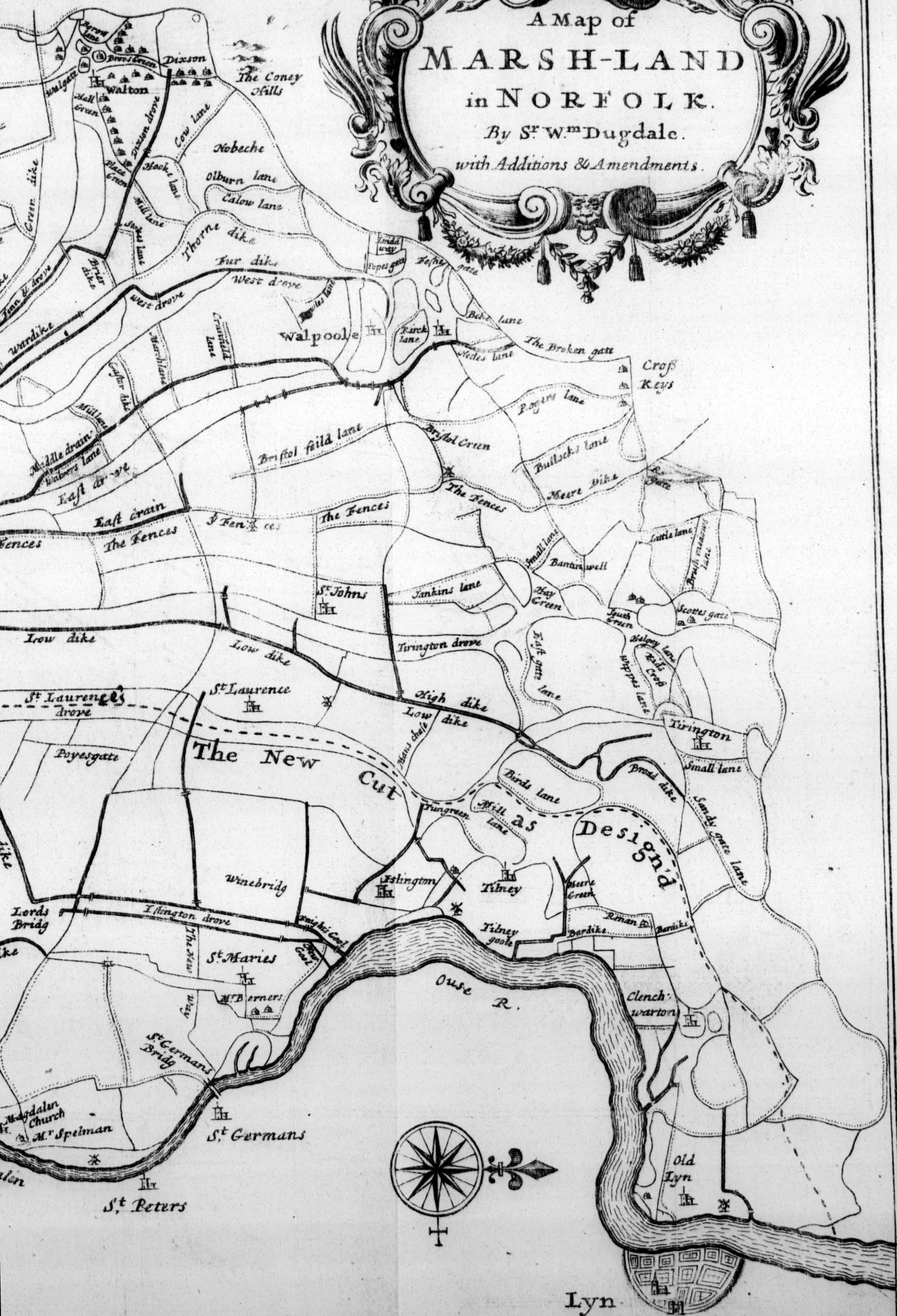
The Scale of Perches



PART OF LINCOLN SH

A Map of  
MARSH-LAND  
in NORFOLK.

By S<sup>r</sup> W<sup>m</sup> Dugdale.  
with Additions & Amendments.









# Some REMARKS Concerning the *Outfalls* of the Country of *Marsh-land*, Presented to the Court of Sewers held at *Lyn*, October 13, 1708.

To the Worshipful Commissioners of SEWERS.

Gentlemen,

ON Monday last I humbly offer'd some Remarks to the Consideration of those Gentlemen, who, in pursuance of your Order, met to view *Knight's-Gool*: Accordingly my Paper was Read and laid upon the Table. But some there present, Privately convey'd it away, and so suppress'd it; I shall therefore beg leave to Contract those Remarks and Proofs into a narrower Compass, seeing my Occasions would not permit me to transcribe the Whole.

The Remarks, with all Submission, were these;

1st, That our Ancestors intended *Knight's-Gool* for an Outlet to carry off the Waters which annoy'd *Marsh-land*.

2dly, That the said *Gool* did in former Days actually answer those their Intentions.

3dly, But that now it is impossible for a *Gool* in that Situation or String to be so Serviceable as formerly.

4thly, That nevertheless there is yet a Way left to drain the Country, and consequently restore it to its ancient Prosperity.

The Proof of the First, I there intimated, depended upon the Proof of the Second: And for this Reason, because, if the Country was absolutely drain'd by Means of *Knight's-Gool*, then no doubt our Ancestors intended it should do so.

The Second I prov'd from what *Mr. Camden* observ'd in his *Britannia*, viz. That the *Smeth* fed thirty thousand Sheep, which was impossible to be done, if both the *Fenn* and *Smeth* had not been then as Good and as Dry as our best Pastures are now: I offer'd also to prove it by credible Witnesses, who have seen both *Fenn* and *Smeth* fed with all Sorts of young Cattle, as well as Sheep: But this was before the Sluces were erected.

The Third I prov'd from the River's being Silted up, which plainly appear'd, a little before the *Lyn-Case* was heard in Parliament, by plumbing is on both sides of *Denver-Sluces*, at which time it was found (if I mistake not) to be deeper by Ten Foot on the other Side, than on This. I prov'd



it also by an Experiment of my own: In *May* I plumm'd *Marsh-land-Fenn* in divers Places, some were six Foot, but the ordinary Level was between four and five Foot Deep. I took the Fall also of the Sewer-Waters into the River, and it was but one and twenty Inches. So that this *Gool*, in this Situation and during these Obstructions, can never, it is plain, carry off near six, five, or four Foot.

The last Remark I made good from the following Observations: *Tuesday* the 11th of *May* last, the height of the Flood was taken both at *Lyn* and at *Knight's-Gool* the same Morning. It then Flow'd at *Lyn* fourteen Foot nine Inches, and at *Knight's-Gool* eight Foot five Inches: The 25th the same was repeated at the same Places, and then it Flow'd at *Lyn* thirteen Foot four Inches, and at *Knight's-Gool* seven Foot. The Difference, you may perceive, is six Foot four Inches, which is the Fall from *Knight's-Gool* to *Lyn*. From these Observations I inferr'd, that a new Cut to *Lyn* would effectually drain the whole Country. I also mention'd some Advantages attending a new Cut.

Which are These,

1st, Several Thousands of Acres wou'd become as good Lands for Pasture and Tillage as ever.

2dly, Upon a Breach in the Sea-Banks, the Waters wou'd be convey'd to Sea more speedily.

3dly, A great part of the Inhabitants would have the Convenience of Water-Carriage in Winter.

4thly, And the Country, by evacuating the stagnated Waters, wou'd be render'd much more Healthful.

Here I urg'd the fatal Consequences of another Breach without a better Outfal; and then answer'd two Objections against a new Cut, which were These,

1st, That the Charge wou'd be very great. And,

2dly, That over and above the Charge, an Act of Parliament must be obtain'd for the doing it.

In Answer to the first, I oppos'd the Advantages, which will abundantly recompence the Costs: And not only so, but, if Things be equally adjust-ed, there will be above Forty Thousand Acres to bear the Burden. And lastly, The Work, when finish'd, will be effectual for Ages.

To the Second I Answer'd, That a little more than an half-penny Acre-shot wou'd procure it, and that the Money so laid out wou'd be to much better Purpose, than to lay out several hundreds of Pounds upon the Repair of this *Gool*, as was lately done, without reaping any Benefit thereby.

This, Gentlemen, was the Sum and Substance of the Paper, which I presented on Monday, the Day of the View. I have nothing more to add, but only to desire, That this Court, if it sees fit, wou'd please to appoint a Surveyor to try these Experiments after me; and then perhaps you would be more fully Inform'd and Satisfied of the Insufficiency of the present Outfal, and, if carry'd into *Lyn-Haven*, of its future Goodness and Sufficiency to Drain the Country of *Marsh-land* entirely.

The



# The CASE of the *HIGH-LANDS* and *LOW-LANDS* of *Marsh-Land*, as to their Common Defence and Preservation by *Drains* and *Banks*.

**T**HE Cuts and Drains belonging to the Level of *Marsh-land*, were at first made and design'd to carry off the Fresh and Salt Waters, which might at any time chance to annoy or surround the same.

And for the voiding such Nuisance, both High and Low-Lands were formerly and are charg'd to some Drain or other.

For the same purpose the greatest Part of the said High and Low-Lands do maintain one common Sewer leading to its Outlet into the River of *Ouse*.

So that when the Outfal was Good, all those Lands which paid to the same, were laid Dry: And consequently they were then (not only all equally Charg'd but) all equally benefited.

But that now by the River's being silted up, the said Outfal is, and has been for several Years past very much impaired and obstructed.

From whence arise these Inequalities:

The High-lands are charg'd to these Sewers and Gools, and reap the sole Benefit of 'em.

The Low-lands are charg'd to the said Sewers and Gools in Proportion to the High-lands, and receive no manner of Benefit thereby.

The High-lands, when surcharg'd with sudden Down-falls, let go their Stops and Dams, and so pour their Waters upon the Low-lands.

The Low-lands do naturally and must of Necessity lodge all those Waters, which the Outfal cannot carry off.

It is plain therefore, that the Low-lands, instead of being equally profited with the High-lands by these common Sewers and Gools, are most grievously oppress'd by the High-lands themselves.

As to the Banks encompassing *Marsh-land*; they are the old and new *Po-dikes*, together with the River and Sea-banks erected at first to defend and preserve the said Country from Fresh and Salt Waters.

To this End, all the High and Low-lands within the said Level are adjoynted, as equally as may be, in all the said Banks.

The High-lands, it is notorious, receive great Advantages by these Banks.

The Low-lands, 'tis as notorious, receive none at all.

To set this Matter in a clearer Light.

Some thousands of Acres of Land (most of which, when Drain'd, may vye with the richest natural Soils in the Queen's Dominions) have been for sundry Years past, and now are continually overflown with Waters; some one, some two, some three, and so on gradually to six Foot deep.

In this Case it is evident, if all the Sea-banks and *Po-dike-Banks* were thrown down, that these Low-lands could not be in a worse Condition than now they are; But surely under these miserable Circumstances the High-lands would suffer extreamly.

From



From the Premises may be inferr'd.

That either the Surface of the Low-lands should be raised to an equal Level with the High-lands, that so all the Lands may share alike in the Advantages and Charges of the Publick Drains and Banks.

Or else that the Low-lands should be quite discharg'd of all Banks and Drains; seeing they have no Benefit by 'em.

Or lastly, that there should be a new Cut to *Lyn*, which will certainly carry off all the annoying Waters: And then all the Lands both High and Low will be (not only equally Charged, but) equally benefitted.

The 1st of these Disjunctives may be look'd upon as impracticable; seeing these latter Ages have not produced any Pretenders to the old Way of removing Mountains.

The 2d, tho' reasonable, will hardly ever be comply'd with; because the Owners of those Lands, which alone receive Safeguard, Preservation, and Profit from those Banks and Drains, must in that Case uphold them at their sole Expence.

The 3d, and last, therefore being a Method not only the most Feasible and Equitable, but also the least liable to Exceptions of any other, seeing it is the very same, that our Ancestors took to preserve the Country, seems to have the best Pretensions to the Consideration of the Commissioners of Sewers; but if they think it be not in their Power to make a Law for a new Sewer and Gool, where never any were Cut or Erected before (tho' several great \* Lawyers are of Opinion, nay one of our † Kings and his Privy Council, have in a Solemn and Judicial Manner declar'd, their Commission warrants their so doing, when the Necessities and Good of the Country require such Works;) I say, if after all that has been said, those Worthy Patriots still scruple their own Authority in these Matters: Yet it is hop'd they will, to the best of their Knowledge and Power, endeavour the Redress, Reformation, and Amendment of the Grievances complain'd of, by a due and impartial Representation of 'em to the Queen and Her Council.

P. B.

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\* In the 43 & 44 *Eliz.* The then two Chief Justices, *Popham* and *Anderson* delivered their Opinions, That new Works might be erected by Virtue of the Stat. 23. *Hen.* 8. See the second Edit. of *Callis* his Reading upon the Stat. P. 97. And the same Point happened to be controverted in King 7. 1. Reign, whereupon his Attorney General, Sir *Hen. Hobert* plainly prov'd this Power of the Commissioners from an expresse Clause in the Commission it self. See *Dugdale's* Hist. of Imb. & Drain, Pag. 372.

† In the 12 *Jac.* upon an Appeal to the King and Council (the same Controversy still depending) the Order of Council runs thus: Their Lordships finding in their Wisdoms, that it can neither stand with Law nor with common Sense or Reason, that in a Cause of so great Consequence the Law can be so void of Providence, as to restrain the Commissioners of Sewers from making new Works, ~~the~~ restrain the fury of the Waters, did Order, &c. See *Callis*, Pag 98, 99, 100, 101, & 102.

Note, The Court, immediately after the reading of these Papers abovemention'd, Voted, nemine contradicente, the Order following, which you may perceive is grounded upon a Presentment of the Jury to that Purpose, as also upon divers Petitions of numerous Land-Owners.

Norff.



Norf. ff. *At a General Session of SEWERS, Holden at KINGS LYN for the said County, on Wednesday the 11th Day of May, in the Eighth Year of the Reign of our Sovereign Lady ANNE, over Great Britain, France and Ireland, Queen Defender of the Faith, &c. Ann. Dom. 1709. By and before Henry Chennery Esq; Mayor of Kings Lynn, Sir John Turner Knt. Hatton Berners, James Holte, William Cony, Samuel Taylor, Charles Turner, Henry Bell, Robert Awborne, William Stafford, and William Pierfon, Esquires, and Henry Towers Gent. Commissioners of Sewers, amongst others assigned.*

**W**HEREAS it was presented by the Jury of *Freebridge citra Lynn cum partibus Marsh-land*, in manner following, *viz.*  
 ' We present the extream bad Condition of the Country of  
 ' *Marsh-land*, whose ancient Outfal at *Knights Gool*, after vast  
 ' Sums of Money expended upon it, is at this time, and has been for a suc-  
 ' cession of Years, insufficient for the carrying off to Sea the Waters which in-  
 ' fest the same, by Means of which Waters, so surrounding a large Tract of  
 ' Land, Noted and highly Esteemed by our Predecessors, and some now  
 ' alive, for their exceeding Fruitfulness and Goodness; a great Part of the  
 ' said Country is miserably wasted, the Common of the Fen, and some part  
 ' of the Smeth almost ruined: Private Owners of particular Levels excessively  
 ' burthened by endeavouring, in Vain, to keep up Banks about them, and by  
 ' Raising and Maintaining New invented and artificial Machines for their  
 ' Security. And lastly, The Roads for heavy Carriages are become Unpas-  
 ' sable; We therefore humbly Pray, that this Court will Order some Person  
 ' or Persons of Probity and Skill, to find out a sufficient Outfal, if such an  
 ' one may be had, for the said Country, seeing the Old one has been found,  
 ' by woful Experience, to be insufficient for sundry Years past, to attain the  
 ' Ends which our Ancestors, when they chose that Situation, had in View,  
 ' and actually afterwards attained, *viz.* The Draining the Country of *Marsh-*  
 ' *land*, if this Honourable Court shall think fit. And whereas several Petiti-  
 ' ons of numerous Land-Owners of the Country of *Marsh-land* were this Day  
 ' exhibited into this Court to the same or the like Effect, humbly pray-  
 ' ing that a suitable Remedy may be had, to and for the deplorable Condition  
 ' of that Country, which has been of thirty seven Years Continuance. This  
 ' Court taking the Matters in the said Presentment and Petition contained  
 ' into their Consideration; and being well satisfied that the same are of the  
 ' greatest Weight and Importance to the said Land-Owners: And that there  
 ' is



is a Necessity for some speedy Course and Remedy to be taken for Relief of the many Sufferers under the great Mischiefs and Calamities therein complained of, have thought fit to Order and Resolve. And it is this Day Order'd, by this Court, that it be referred to all the Commissioners at this Session Present, or any Five or more of them, to enquire into the Premises, and to consider such Ways and Means as may be most proper for the Ease and Relief of the said Country in this behalf; And for that purpose they are desired to meet from time to time, as they shall appoint, and to take to their Assistance such able and experienced Surveyors and other Persons Skilful in Draining and other Works of Sewers, as they shall think fit, and to inform themselves of the Necessity and Reasonableness of the Matters in the said Presentment and Petitions prayed and proposed, and to make an Estimate of the Charge and Expence of such, or any other Works that shall be thought Necessary for those Ends, and to continue such their Meetings from time to time, as Occasion may require. And that the Clerk of this Court, together with the Expenditors of *Marsh-land* do attend the said Commissioners at such their Meetings. And that timely Notice be given by the Expenditors to all the Commissioners of Sewers to whom it is so referred, and to the Dike-reeves of each Town-ship of the Time and Place of the first Meeting, to the end, that such as shall think fit, may be present and Attend the same.

*Note, This Order was never duly Executed in any Part of it; But on the contrary, Mr. Berners, the eldest Commissioner (I suppose) had prepar'd the following Objections and Proposals, which were Read in open Court the Sessions following.*

### *Some Objections against Mr. BATESON'S*

*Com. Norff.* Paper, presented to the Court of Sewers held at LYN, October 1<sup>st</sup>, 1708. Concerning the Outfalls of Marsh-land. And some Proposals for a much more speedy and effectual Way to Drain the Country.

*Humbly offer'd to the said Court, Octob. 12, 1709.*

**T**HAT a great quantity of *Marsh-land*, instead of being Profitable to the Owners, has for divers Years last been very Chargeable to them, because their two great Outfalls, upon foul Weather at Sea, and at other times, are choak'd up with the Silt, dropping all along in its Course to the Sluces at *Salter's Load*, and settling there, for want of the Length of the return of the Tide to grind it off, as formerly, is a Truth too



too well known, not to seek a Remedy. But since Art may be the help of this Misfortune, as well as 'tis of Nature, the Dropsie in the common Fen, now affecting the Vitals, I mean, drowning the adjacent Lands of several Persons; I thought it worth the while of one, whose Interest is complicated with his Duty, to prescribe Ways and Means for its Revovery.

BUT, that a new Cut of eight Miles long, cross the Hundred to *Lyn-Haven*, should in the least conduce thereunto will be judg'd most uncertain (I believe) and improbable, when 'tis Considered.

1st, Upon digging this new and long Tract, how various the Sorts of Earth will be; here a stubborn Clay, there a spewing Silt, at another Place a black Moore and the Red Earth, then Reed-roots and Hassocks, which will often founder and slip into the Work.

2dly, In so long a Drain, the Sewer must have many Elbows and crook-ed Turns in it, running much slower for its length, and the Obstacles of so many Bridges, which must necessarily be made over it, for the intercourse of the Inhabitants of the several Towns of this Country, which is to be cut into halves, (since 'tis eight Miles long and broad,) not to mention the Difficulties of making the Brink stand, ~~there~~ or so well Sefs'd off.

3dly, The time it will take to perfect this Work, with the 8000*l.* it will Cost, (as Mr. *Bateson* says) and an Act of Parliament to satisfy all Interests upon cutting away their Lands, &c. and making Drove to their Grounds; not that I think the Country would regret any reasonable Charge, upon the Prospect of its doing Service. But, grant it possible to Level Hills with Valleys, (for so 'tis in many Places) that almost an insupportable Charge will be entailed upon this Age and Posterity, by this new Channel eight Miles long; since lately the Dyking out but a Part of an old Sewer, cost eight Shillings a Rod, besides the Charge of throwing off the Earth.

4thly, The Gauging at Sea, and the Inland Waters, seems most doubtful, since the height of the Freshes is often succeeded by Droughts, and the Out-falls even at Old *Lyn* are deep or shallow, according to the set of Ebb and Tide, agitated by the Winds; besides the Marshes where this new Cut is Design'd, as I am told, and is visible, are above three Feet higher than the Level, so that the digging there, must be nearer the Antipodes than in other Places, or force the Waters up Hill.

NOT to think of these Difficulties; and by a speedy, much less Chargeable, (and according to humane Conjecture) more certain way to restore this Spot of Earth to that flourishing Condition it enjoy'd most part of the last Century, and some Ages before; I would with all Submission PROPOSE.

1st, That it be the Care of the Officers of the Country, and that they be enjoyn'd, and encouraged by their Winter Circuits, to keep out all Foreign Waters, which run, without any Law, into *Marsh-land*, which was  
B constantly



constantly given in Charge by our Ancestors, and to reinforce the Law of this Court of the 20th of King *James*, for erecting two Houses at Distances upon the Old Podike, for Labourers to live in, to prevent the cutting of it, by which the downfal of 5000 Acres run into the Fen continually, when as we can run out but four Hours in twelve at the River.

2dly, That *Lords Bridge* be lengthen'd by those who have the Privilege to set one Net there, being the first Bridge through which the Freshes in a strait Line descend to the Ouze, and that the great Letts, Stops, and Annoyances, by laying Gregs, and Fish Trunks cross the great Drain be removed, and the Netts, with the divers sorts of Impediments, upon *Islington-Common* be taken away.

3dly, That two substantial Engines or Mills be plac'd upon the great Load which is very strait, and but a Mile and half from the neck of *Marsh-land Fen*, to the two Goats or Gools, which by the Experience of our next Neighbours, and our Friends Abroad, has been very Successful to ride the Waters at Sea, by raising and hastning the Freshes thither, for which a Law of this Court was to have been provided.

4thly, That the Sole of the old Gool, be sunk two Foot, being its old Foundation; and that the new Jetty at *Islington Shoar* be forthwith Rooted up, being set down for the particular Interest of one Town only, and that by an Order only; it having been exclaim'd against, as the chief Cause of silting the String, and choaking the Mouth of the old Gool, and has made the new Gool very Sickly and Chargeable; at which Passengers Smile, as well as the Engineer from *Portsmouth*, when Complaint was made to him of the Outfalls, asking what it did there.

THESE Things being accomplished, since by natural Situation we have so good a Current, the South and South-west Winds being the frequentest in the Year, blowing upon it, and by the great Prudence of our Fore Fathers, the chief Sewer being very strait, less than two Miles to Sea, and consequently more quick and rapid: 'Tis more than probable, that for the Expence of fewer hundred Pounds, than Mr. *Bateson* says Thousands, for the new Cut of eight Miles long, cross the Country. This Angle may become (as formerly) the Envy of some other Places, and by the soundness of their Commons, the Profits of their Severals, the healthfulness of their Climate, the goodness of their Highways, and their ease of Acre-shots, may attain to its former Credit and Prosperity.

This is gratefully presented to the Members of this Court, who have always receiv'd and Countenanc'd Overtures of this kind, and never spared their Pains upon Views, for the Welfare of these Parts, which has encouraged me to shew the impossibility of this eight Mile Project, and to demonstrate, (in opposition to the Proverb) that in this Case, the farthest Way about, is not the nearest Way Home.



A N  
A N S W E R  
T O  
SOME OBJECTIONS  
O F  
*HATTON BERNERS, Esq;*  
Against a PAPER Intit'led,  
Some R E M A R K S Concerning the O U T F A L L S of the Country  
O F  
MARSH-LAND; &c.

As also,

An A N S W E R to his P R O P O S A L S

For a much more speedy and effectual Way to Drain the  
Country, than by a New C U T and Natural F A L L.

---

By PETER BATESON.

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Printed in the Year 1710.



(18)  
A

ANSWER

TO  
SOME OBJECTIONS

OF

MR. TOWN-BLANKET

Against a Bill



for the purpose of the

OF

MARSH-LAND

As

In ANSWER to his Proposition

of a much more speedy and efficient Way to drain the  
Country than by a New Cut and Natural Fall

By PETER BARRON

Printed in the Year 1710



A N  
A N S W E R  
T O

Mr. *Berners's* OBJECTIONS and PROPOSALS.

*Object. 1.* **U**PON digging this New and long Tract, how various  
 ' the Sorts of Earth will be; here a stubborn Clay,  
 ' there a spewing Silt, at another Place a black Moore  
 ' and the Red Earth, then Reed-roots and Hassocks,  
 ' which will often Founder and slip into the Work.

*Ans<sup>w</sup>.* To which I Answer: If variety of Earths be an *Objection* of any  
 force now a Days, then it was an *Objection* of force in those Days, when  
 our Ancestors cut the old Sewer out of the whole Ground: But, it is plain,  
 that our Ancestors either look'd upon this *Objection* as altogether trifling and  
 frivolous, or else it was never urg'd to 'em; because the old Sewer (for all  
 the *Objector* knows) was cut through all these several Sorts of Earth without  
 foundring or slipping into the Work. In short, the *Objection* will equally  
 hold against all Undertakings of this Nature, and therefore cannot affect this  
 in particular.

2d *Object.* ' In so long a Drain the Sewer must have many Elbows and  
 ' crooked Turns in it, running much slower for its length, and the Obsta-  
 ' cles of so many Bridges, which must necessarily be made over it for the  
 ' intercourse of the Inhabitants of the several Towns of this Country, which  
 ' is to be cut into halves, (since 'tis eight Miles long and broad) not to men-  
 ' tion the Difficulties of making the Brink stand, tho' never so well Sess'd off.

*Ans<sup>w</sup>.* This is also an *Objection* in Generals only against all Works of  
 Sewers of this kind; yet because it seems to consist of several Articles which  
 may be thought to have some Weight in them, when altogether, if not par-  
 ticularly Answer'd, I will therefore beg leave to consider them distinctly.

And first it is *Objected*, This new Cut must have many Elbows and *crook-*  
*ed Turns* in it. To which I Answer; It may be made very near as strait as  
 the Old one, as may be seen in the Map of *Marsh-land* hereunto annex'd.



The second Particular contain'd in this Article is, that the length of this new Cut (it being design'd to be eight Miles long) will make the Waters in the Sewer run much slower. Or (as another Gentleman has put this Objection to me) when the new Cut has run off five Foot, or five Foot and an half of Water, then it can carry off no more, because there ought to be six Inches Fall in every Mile to make the Water Draw. I desire your Patience whilst I Answer both these Objections as they are put: For a full and clear Answer to both, will convince Men how false their Notion is, who think, that the longer the Cut is, the more prejudicial it is to Draining, whereas the quite contrary is really True.

Now the Consideration of the *Nature and Properties* of Water, in reference to Draining, to express my self to every Capacity, will very much contribute to the true understanding of this Matter: And the *Properties* of it in *this respect*, are these two:

*First*, It naturally Descends when it has Vent and any Fall, tho' never so small, insomuch that the least Inclination, tho' in a Course of many Miles, will always bring the Waters to the Vent or Outfal.

*Secondly*, When penn'd in by stopping the Vent, it naturally comes to a Level.

That the first is true, is plain both from Experience and the natural Reason of the Thing. For Gool-Keepers, and those that live near to Gools and Sewers will inform you, that nothing is more common than for the Gools to run and vent Water, when there is but barely one Inch Fall. Nay, I can prove, that when the Water in a Drain has had no more than two Inches Fall into the River of *Ouse*; yet that small Draught was discernible to the Eye near upon a Mile from the Outfal. And in this Case the Reason of the Thing is exactly agreeable to Experience and Observation; for when the River gives way, that is, when the Water in it is lower, than the Water in the Sewer, the Gool-Doors (not otherwise hinder'd) must of necessity fly open, because there is a bigger weight of Water on the Land-side than on the River-side. And when the Doors are thus open'd, the Waters next those Doors must necessarily descend to Sea, because it is the Nature and Property of Water so to do: And can any Man imagine but that those Waters, next to these that march'd off first, must follow after, and so the next to those last till the whole Body of 'em be mov'd. And this natural Course of Water is so Constant and Regular, that it was never known to alter but by a Miracle. I am extreamly desirous to make every Thing plain, Gentlemen, and therefore, I hope, it will not be taken amiss, if, to illustrate in some Measure what I have already said (tho' perhaps the Parallel, in strict Criticism will not hold) I repeat four Lines out of *Hudibras*, which are these,

For *Hudibras* wore but one Spur,  
As wisely knowing could he stir,  
To active Trot one side of's Horse,  
The other would not hang an —



The second Thing we were to Consider was, That Water pent up does naturally come to a Level.

Tho' they ( as I said before ) who live near Sewers and Gools, see this Proposition verified almost every Day ; yet for the sake of those, and only those, who are really ignorant of taking the Fall of Waters, I shall describe it to 'em, because it will give 'em a true Insight into this Affair. At Low-water-Mark therefore we take a Pole of sufficient length for our Purpose, and drive it down into the Sewer on the Land-side of the Gool, but yet so as there shall be three or four Foot of it above the Superficies of the Water, then exactly Level with the Superficies we make a Notch upon the Pole : Immediately upon the shutting of the Sea-Doors, you shall perceive the Fen-Waters flow above the said Notch, and so they shall rise gradually, till such time as they come to a perfect Level in the Sewer : And so much as the Waters rise above the Notch in the Pole, so much is their Fall. It is observable too, that at *Knight's-Gool*, the Waters are above three quarters of an Hour before they come to a Level after the shutting of the Sea-Doors : So that it is plain, tho' they have no Vent all that while ; yet they are moving towards their Outfal, till they come to a perfect Level. Be pleas'd to take Notice, That the Drain leading to *Knight's-Gool*, is not much above a Mile before the Waters are expanded, and yet they move three quarters of an Hour, and above, to the very Outfal after their stoppage there : So that by parity of Reason, the Waters in a Drain of eight Miles long between the expanded Waters and the Outfal, must be moving forwards near upon six Hours after the closing of the Sea-Doors. I conclude therefore, that the great length of this intended Cut will rather be Advantageous than Hurtful to us, as to the business of Draining ; because, by that Means the Waters will be almost in continual Motion to Seaward in one part or other of it, and so be more ready to discharge themselves as soon as the Sea gives way

The third Particular is, The Obstacles of so many Bridges which must necessarily be made over this new Cut for the intercourse of the Inhabitants of the several Towns of this Country.

To which I Answer, Bridges may be made over the Drain so as to have as much Water-way under them as in any other part of the Drain, and therefore they can be no Obstacles in Draining. And as for Intercourse, if I mistake not, they always have been, now are, and hereafter will be built for that very End and Purpose, which is the Reason we always praise the Bridge we go over.

The fourth Particular is, an Insinuation of some Injury from the Country's being cut into halves : But this has nothing of Argument in it. 'Tis certain we have already lost near one half of it, and by cutting it into halves, we shall certainly regain what's lost. But if we do not cut it into halves, then we are in danger of losing the Whole. And supposing the Country should be thus halv'd, where is the harm of it ? Are not two Six pences as good as a Shilling ? This therefore can be no Grievance to any Man, provided Bridges be made in proper Places, and the Land cut through paid for.



In the fifth Particular is insinuated, the Difficulties of making the Brinks stand, which, I humbly conceive, may be made to stand by leaving Shelves after the digging of three or four Foot Perpendicular. The Cut leading to *Wigen-Hall-New-Gool* does plainly Demonstrate, that the Brinks will stand (if well sefs'd off, and a Table or Shelf left, as there is) tho' the Drain be cut through the highest filty Lands.

3d. *Object.* The Time it will take to perfect this Work with the 8000 *l.* it will Cost, (as *Mr. Bateson* says) and an Act of Parliament to satisfy all Interests upon cutting away their Lands. &c. and making Drove to their Grounds; not that I think the Country would regret any reasonable Charge, upon the prospect of its doing Service. But grant it possible to Level Hills with Valleys, (for so 'tis in many Places) that almost an insupportable Charge will be entail'd upon this Age and Posterity by this new Channel eight Miles long; since lately the diking out but a part of an old Sewer cost 8 *s.* per Rod, besides the Charge of throwing off the Earth.

As did the second, so does this third Objection contain a great many Particulars drawn together. I crave leave therefore to Examine them separately.

*First*, It is intimated, (if I rightly understand this Particular) that it will take a long time to perfect this Work. To which I Answer, If it be once set about in good Earnest, and with the Objector's Approbation, it may be finish'd in twelve Months, which is no great Time, considering the greatness of the Undertaking.

*Secondly*, It is intimated the Charge will be very great, seeing I have said, it will cost 8000 *l.* In Answer to this, I have already said in my Paper of Remarks, That the Advantages will abundantly recompence the Costs, the truth of which will appear by giving you an Estimate of the Losses, which the seven Towns of *Marsh-land* have sustain'd as to their Commons only, computing from that unfortunate *Era*, the last great irruption of the Sea to this Time. It is thought there may be about six thousand Acres drowned in the Fen and Smeth, which if Drain'd would, I reckon, be worth a Noble an Acre yearly; this comes to 2000 *l.* per *Ann.* which, multiplied by 38, the number of Years from the Date abovemention'd, wou'd amount to 76000 *l.* And if I was to set the Price, as a great many Commoners and Farmers affirm they give for worse Lands than most of the Fen and Smeth has been, and may be again, *viz.* a Mark an Acre, the Sum would amount in the whole to 152000 *l.* too great a Sum for the Commoners of *Marsh-land* to lose without doing the Publick any Service. And besides these immense Sums, the Losses of private Owners of Lands are to be consider'd, which it is impossible for me to recount in Particular, tho' it cannot be deny'd, that there are several such, who have been great Sufferers during this Calamity. To my Knowledge some Persons have lost as much as would have purchas'd their Estates, were they now at this Time to be as good as ever they were known to be. These Things consider'd, Gentlemen, you will give me leave to say, 'tis high time to look out for such Means as may effectually put this Country

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in *Statu quo*. Shall we grudge to lay out 8000*l.* Prime Cost, when the Commons alone, at a Mark an Acre, as some reckon, will bring us in 4000*l.* *per Ann.* and the private Estates, now lost, near upon as much.

*Thirdly*, It is objected again, That an Act of Parliament must be had to satisfy all Interests upon cutting away their Lands, and making Drove to their Grounds. As to the Charge of an Act of Parliament, I have already answer'd that in my Paper of Remarks; and as to private Owners Lands, there will be but few of them to Purchase, either for the Drain or Drove, because if my Design be put in Practice, the Cut is to run through *Tilney-Drove*, which is a Common that extends it self above half Way, and is also sufficiently wide for the Purposes abovemention'd. I am entirely of the Objector's Opinion, if he means, that the generality of the Country will not regret any reasonable Charge upon the Prospect of its doing Service; for I am very well assured from the great Numbers that have already Petition'd this Court, (and are still ready with an addition to their Numbers to Petition again, when and where relief may be had) That the Country in general will heartily fall in with this Project, having long enough try'd the old Way to their great Costs, without answering their Expectations; tho' at the same time, I am very sensible there are, and ever will be in Cases of this Nature, some few, who do regret a reasonable Charge without any manner of Reason, Equity or Goodness on their sides. As to the Insinuation, that Hills must be level'd with Valleys, there is no manner of Occasion for it, only the Drain must be dug to a level Bottom both through Hills and Valleys, if the Objector will have those words applicable to one of the most level Countries in the World.

*Fourthly*, This new Channel of eight Miles long, is Charg'd with almost an insupportable Charge to be entail'd upon this Age and Posterity, since lately the Dikeing out of an old Sewer cost eight Shillings *per Rod*, besides the Charge of throwing off the Earth. I suppose by this old Sewer is meant the \* *Smeth-Load*, which every one knows, had not been Dik'd for a great many Years past, till that dry Summer in which it was Scower'd: But who knows not that the long neglect of it was the Occasion it was fill'd full of Slough and Dirt? Which prov'd worse by far to clear, than if a new Sewer of the same Breadth and Depth had been made out of the whole Ground. But when our new Sewer is finish'd, it will never come to that pass, unless the whole Country be swallow'd up (as now near half of it is) with Waters. And I am really perswaded it will be a very easie Charge to keep it in good Order, provided every Town have its particular Allotment in it, to be done by their own proper Officers. I presume also to say, that whenever this Design shall be accomplish'd (as I am in hopes it shortly will) notwithstanding the unreasonable Opposition of its Adversaries, our Posterity (if grateful) will bless their Fathers Memories.

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4th Ob-

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\* Here Mr. Berners stood up and said, he did not mean the *Smeth-Load*; but be it any other Load or Drain, I conceive the Objection will not mightily affect the Case.



4th *Object*. ' The gauging at Sea, and the Inland-Waters seems most doubtful, since the height of the Freshes is often succeeded by Droughts, and the Outfals even at old *Lyn* are deep or shallow, according to the sett of Ebb and Tide agitated by the Winds; besides the Marshes where this new Cut is Design'd, as I am told, and is visible, are above three Feet higher than the Level. So that the digging there, must be nearer the Antipodes than in other Places, or force the Waters up Hill.

*Answer*. To the first part of this Objection, That my Method of making the Experiments by gauging the Tides and the Fenn-Waters, seems to be most doubtful; I Answer, It seems to be certain; because I have try'd it several times since I first offer'd my Remarks to this Court, and, both in the dry and wet Seasons, I found it to answer our Purpose. However, since I first inform'd this Court of my Experiments, this worthy Gentleman has had sufficient time to disprove 'em (if he could have done it) by some of his own Experiments. I leave it to your Judgments, Gentlemen, whether this be a fair Way of confuting Experiments, by objecting, Magisterially, it seems most doubtful. For at this rate a Man may avoid the force of the strongest Arguments, and most glaring Truths in the World.

To the Second; That the Outfal of *old Lyn* is deeper or shallower, according to the Wind's agitating the Waters. I Answer; Let the Winds agitate the Waters never so much, yet ever since Captain *Wilshaw* and my Self made these Tryals at *Lyn* and *Knight's-Gool*, they always answer'd Expectation: And besides, where I have design'd the Outfal to be (but always with submission to this Court) the Ebb and Tide both set continually, which will be a very great Advantage to the Outfal, by reason the Gool-Doors will always open, as Occasion serves, without any Trouble or Charge Extraordinary.

To the last part of this Objection, which shews the Objector's Tenderneſs towards our Antipodes. I Answer; The Cut is design'd to be carry'd with a level Bottom all the way through, and I have already shewn how the Brinks may be made to stand through the highest parts of *Marsh-land*; and if so, then I see no reason why we should be afraid of digging nearer the Antipodes: Surely they will not hurt us, and sure I am we shall not harm them, and so pass we on to consider his Proposals.

1st *Propos*. ' That it be the Care of the Officers of the Country, and that they be enjoyn'd and encouraged by their Winter Circuits, to keep out all Foreign Waters, which run without any Law into *Marsh-land*, which was constantly given in Charge by our Ancestors, and to reinforce the Law of this Court of the 20th of King *James*, for erecting two Houses at distances upon the old Po-dike for Labourers to live in, to prevent the cutting of it, by which the downfal of five thousand Acres run into the Fen continually, when as we can run out but four Hours in twelve at the River.

*Answer*. This Proposal is consistent with my Design, only I must needs say, that the Dike-reeves of the several Towns of *Marsh-land* have ruin'd the old Po-dike by digging up the Skirts of it, to heighten it in the middle: So that indeed, it can no longer be call'd the old Po-dike-Bank, but the Stinting or Cradgen



Cradgen belonging to the old Po-dike. To remedy which Abuse, I humbly offer this Method of repairing it, *viz.* That *Wigenball* be first obliged to make Good that part of the old Po-dike belonging to it (if it be not already good enough) for Carts to carry Silt from the River at *Stow-Bridge* to the next Charge, which I think is *Tilney*, and so on to the other Adjoyntments in Course. This Silt mix'd with the Moor, has been experienc'd to make a better Bank than any Earth whatever; nay it will be found to bind almost as hard as Gravel it self. Then the two Houses (as here propos'd) may be Built, but till then sufficient Foundations will hardly be found for 'em at due Distances.

2d. *Propos.* ' That *Lords-Bridge* be lengthen'd by those who have Privilege to set one Net there, being the first Bridge through which the Freshes in a strait Line descend to the *Owze*, and that the great Letts, Stops, and Annoyances, by laying Greys and Fish-Trunks cross the great Drain be removed, and the Nets with the divers sorts of Impediments upon *Issington-Common* be taken away.

*Ans.* The former part of this Proposal is not well grounded; because it puts the Lady, the Owner of the Bridge, upon an unnecessary Charge, seeing there is twenty Foot Water-way there, and five Foot Water-way at *Waterlesue-Tunnel*, which is five and twenty Foot of Water-way in breadth at the very place complain'd of, when at the very same time, both the Gools themselves do carry off no more than fifteen Foot in breadth. As to the removing the other Letts, Stops, Annoyances, Greys, Fish-Trunks, and Nets, the Laws already in being are of force Sufficient.

3d *Propos.* ' That two substantial Engines or Mills be plac'd upon the great Load, which is very strait, and but a Mile and half from the Neck of *Marsh-land-Fen* to the two Goats or Gools, which by the Experience of our next Neighbours, and our Friends Abroad, has been very successful to ride the Waters at Sea, by raising and hast'ning the Freshes thither, for which a Law of this Court was to have been provided.

*Ans.* To which I Answer, *Si populus vult decipi, decipiatur*; But I shall make it appear, that 32 Engines of 450 *l.* a piece cannot by far vent so much Water as a Cut of thirty Foot wide at the Bottom, with a natural Fall of eight Foot. An Engine of 450 *l.* price, shall have a Water-wheel of sixteen Foot Diameter, it shall dip four Foot, and raise four Foot, but will scarce carry off three Foot of Water from the Grounds surrounded. And it is known, that according to the Rules of Art, the Skuppets of such an Engine dipping so deep, ought to be a Foot and an half broad. Place then sixteen of these Engines upon the same Height or Level, and then reckon what they will carry off, and you will find 24 Foot in Breadth; after this, count what height they can raise the Water, which I told you was barely four Foot. Now it must always be remember'd, that upon placing your Engines to gain an artificial Fall, you put by your Natural one, by making your Engines do the work of Nature. So that these sixteen Engines will have but four Foot Fall, and can carry off no more than three Foot of Water from the Level to be Drain'd, because the Skuppets, when they have but one Foot to dip in, can



throw no Water at all. What then must be done with the remaining three Foot of Water in the lowest parts of *Marsh-land*? Why, you must clap down sixteen Engines more of the same bigness, to raise it to the first Sixteen: But still you must consider the Fall will be no more than you had before, *viz.* four Foot. 'Tis true, by this Means you may carry off six Foot of Water: But then let us compare this Artificial and my natural Fall together. The Artificial one will carry off a Body of Water of four Foot in depth and 24 Foot in breadth continually whilst the Engines Work, and no longer: But the Natural One, as propos'd, will carry off a Body of 30 Foot in breadth, (and more by reason of the sloping of the Drain) and 8 Foot in depth till such time as the Water shrinks in the low Grounds, and then the Fall, 'tis true, must decrease as the Water shrinks; yet still, for all that, this Natural Fall shall be better than your forc'd One; because the first will vent your Waters sleeping and waking, as they say, whilst the last must sometimes wait a Fortnight, perhaps a Month for a brisk Gale of Wind, during which intermission, the Waters in a wet Season must of necessity increase: And here I wou'd observe to you, that all these Engines thus dispos'd, cannot possibly \* ride the Tide; for sometimes the Spring Tides shall rise at *Knight's-Gool* 13 or 14 Foot, and how will the Engines be able to Work against such a vast Head of Water: No, at such a time your Engines cannot run the Water out to Sea above 6 Hours, supposing a Wind, and 'tis confess'd, even by this Gentleman himself, that the Natural Fall we already have, runs four. Again, when the Gool Doors are shut, and there happens (as it often will happen) to be a Wind sufficient for your Engines, you have not a Receptacle sufficient for your Waters, so that the Engines must be gentle Spectators till the Sea gives Way, and then perhaps there is a Calm. And we have but too much reason to fear the Winds will not be commanded when we stand in the greatest need of 'em. The Sum of what I have said about Engines, Gentlemen, is this, That two and thirty of 'em, of 450*l.* a piece, cannot possibly utter so much Water as a Cut of 30 Foot wide at the Bottom: And I am sure so many Engines will be much more chargeable than the Cut as Design'd: For the Prime Cost of these Whirligiggs will amount to 14400*l.* whereas the Prime Cost of a natural Drain, will not much exceed half the said Sum. I shall not need to tell you, that such a number of Machines will require a great many Mill-wrights to repair 'em, a great many Millers to tend 'em, a whole Forrest of Wood to supply their daily Wants, abundance of Iron, Sails without Number: All which Clutter will cost the Country above 1600*l.* a Year to maintain 'em, and may be avoided by a natural Drain. Before I dismiss this Argument, I cannot (no more than the Learned Objector cou'd) pass by the Experience of our next Neighbours and our Friends abroad, which I think ought rather to induce us to accept of a Natural Fall, and to look upon it as a peculiar Happiness that we can have one to do our business Effectually. Amongst our Neighbours, consider the Engine at *Tidd St.*

\* Here Mr. Berners said, he did not mean the Engines should ride the Tide, tho' 'tis plain he said the Waters at Sea.



*St. Giles*, which cost 450*l.* has a vast Receptacle for its Waters, and but 2400 Acres to Drain, and yet cannot do it Effectually, the Land-Owners having since erected another for the same Purpose. What a wild Fancy is it then, think you, to propose two Engines to cope with 40000 Acres. Be pleas'd to take notice further, That both these Engines are not to cost above 400*l.* according to the Proposal: For the sinking of the Gool will swallow up the other 400*l.* I stand amaz'd to think, that an ingenious Gentleman, and one who understands the Affairs of *Marsh-land*, as well, if not better than his Neighbours, should publish these following Words in Print to the World, viz. ' These Things being accomplished, i. e. The four Proposals, assisted by the South and South-West Winds, 'tis more than probable, that for the Expence of fewer hundred Pounds, than Mr. *Bateson* says Thousands, for a new Cut of 8 Miles cross the Country; this Angle may become (as formerly) the Envy of some other Places, and by the soundness of their Commons, the Profits of their Severals, the Healthfulness of their Climate, the goodness of their High-ways, and their ease of Acre-shots may attain to its former Credit and Prosperity. These are fine specious and amusing Things spoken, yet such as may effectually be brought to pass by a Natural Drain; but I think I have prov'd, that the Winds, and two Wind-mills, &c. can never accomplish 'em.

Now let us consider our Friends abroad, by whom, as I take it, are meant the *Dutch*: And can any Man think, that those industrious and thrifty People wou'd have recourse to Art, if their Country cou'd be Drain'd Naturally? *Dugdale* says, That within the space of these last fifty Years (reckoning to the time he writ in) they had Drain'd sundry Lakes, whereof 16 were most Considerable, by certain Wind-mills devised and erected for that Purpose. The chiefest of which Lakes call'd the *Beemster*, (containing above 1800 Acres) is made dry by the help of threescore and ten Engines; which Expence we may be sure they wou'd never have been at for 1800 Acres, if they could have had a Natural Fall, as we may have for the whole Country.

4th *Propos.* ' That the Sole of the old Gool be sunk 2 Foot, being its old Foundation; and that the new Jetty at *Islington*-shore be forthwith Rooted up, being set down for the particular Interest of one Town only, and that by an Order only; it having been exclaim'd against as the chief Cause of silting the String, and choaking the Mouth of the old Gool, and has made the new Gool very sickly and chargeable, at which Passengers Smile, as well as the Engineer from *Portsmouth*, when Complaint was made to him of the Outfalls; asking what it did there.

To this I Answer. The sinking of the Gool to the old Foundation, can be of no Service to the Country, unless the ingenious Proposer could find a way to scour the River to the old Bottom: I say, it will be time enough in this Case to undo what others upon due Deliberation have done, when the River has actually regain'd its ancient Channell, which it is impossible ever to do, so long as *Denver*-Sluces are in being, and Jetties are wanting on each side of the River to straiten some Parts of it between *German's-Bridge* and *Lyn-Haven*. Surely the Country will never yield to this part of the Proposal



posal, whilst the River continues thus, when, 'tis plain, not one single Rood of Land in the whole compass of *Marsh-land* will be the better for so doing.

The second part of this Objection is, ' That the new Jetty at *Islington* shore be forthwith rooted up! By all Means; let's lose no time, let us make all the hast we can to our own Destruction. For this new Jetty (as the Proposer is pleas'd to call a piece of the old Sea-Bank repair'd) is the Safeguard of the whole Country of *Marsh-land*, and it would be much more for the Security of it, if there were Jetties all along that Shore where the Bank anciently stood. Any one that knows this present Inbank, must own the Country to be but slenderly Guarded, seeing there is no Back to the Bank, but all a very low Country behind it. In short, this Jetty seems to stand upon the same Foundation with part of the old Sea-Bank, and if the Owners of the Jetty insist upon it as such, and it really proves to be so, I can see no manner of Reason we have forthwith to root it up. But granting it to be no other than a new Jetty, I will demonstrate to this Court (with your leave, Gentlemen) That long before the setting of it down, *Knight's-Gool* was liable to be often filted up an hundred Years ago, nay probably ever since it was a Gool. These are *Dugdale's* Words transcrib'd *verbatim*. ' After this (says he) at another Session of Sewers, held on the 17th day of April, in the Year of our Lord 1610, (8 Jac.) It being considered that this Country of *Marsh-land* was subject to surrounding, as well by downfalls of Rain, as by the overflowing of the Sea and Fresh Waters; and was therefore kept drained by Sewers, descending to *Knight's-Gool* (the common Outfall of the great River of *Ouse*) and that the said Gool, by the Flowing and Ebbing of the Sea, was then so filted up with Sand at divers times, especially in Summer, that it obstructed the Waters in the said Sewers, to the utter surrounding of all the Fens and low Grounds in the said Country: And moreover, that the said Gool in former Time had been kept and perfected, as also the Fleet from the same, unto the before specified River, by a certain ancient pair of Clows, placed up higher in the Sewer thereby: One appointed for the taking in of the Tides, and so holding up the Water between a pair of Clows, until the River of *Ouse* was run Low; and then forcibly let go for the scouring of Sand out of the said Gool. So that, Gentlemen, you perceive 'twas said at that time, which was in 1610, that the Sewer, the Gool, and the Fleet were kept and perfected, and scowr'd from the Sand by forcibly letting go the Waters contain'd between a certain *Ancient* pair of Clows. It is more than probable therefore, that this Misfortune of filting up has attended *Knight's-Gool* ever since it was a Gool or Goat. And therefore this Jetty may stand, seeing the pulling of it up will endanger the whole Country of *Marsh-land*; and besides, when it is rooted up (as the term of Art is) the String of the Gool will still be filted up, as is evident from my Author's Words, and the Situation of that Gool placed at too great a distance from the Channel of the *Ouse*. I hope no one can say, that the Jetty is the Occasion of filting up the bottom of the River, nay, I dare say, this Gentleman, himself, will not give that as a Reason for the rooting of it up forthwith. Consider therefore, I beseech you, what small  
Grounds



Grounds and Reasons they had, who have so long exclaim'd against this Jetty. As for those smiling Passengers, and that smiling Engineer from *Portsmouth*, I shall only say, that if they laugh'd at the Jetty, they laugh'd at what they did not Understand: If they laugh'd at the poor old Gool for being Choak'd, or the new Gool for being very sickly, they were not only very hard-hearted, but very uncivil, seeing they have neither given us a Receipt for their Cure; nor shewn us some more effectual easy Way for the Draining of *Marsh-land*, which, I humbly conceive, I have since done.

*These following CERTIFICATES sufficiently Demonstrate, that Two substantial Engines can be of no Service for the Effectual Draining of the Country of MARSH-LAND.*

*The Certificate of Edward Dampson of Tidd St. Giles.*

I Do hereby Certifie, that the first Engine at *Tidd St. Giles* cost to old *Colton* 450 *l.* and has been Built about 13 or 14 Years. Since the Building of this Engine, it has cost the Land-Owners, which paid to it, and the Drains belonging to it, seven and twenty Shillings and ten Pence half-penny an Acre. There are about 2150 Acres which pay to it, both in *Tidd St. Giles* and *Newton*; but notwithstanding this great Charge, this Mill was found to be insufficient for Draining these Lands, and for keeping the Outfal to Sea open, which every Year was so silted up, that tho' it raised 4 Foot of Water; yet was insufficient to keep the said Outfal open at all times, tho' *Leverington* old Mill at the same time threw the same quantity of Water with it into the same Drain and Outfal; so that about 5 Years ago the Land-Owners of *Tidd St. Giles* and *Newton*, were necessitated to erect another Engine, which has cost them near upon 500 *l.* from that time; and still the Outfal to Sea is often stop'd up with Silt, as before; so that they are obliged notwithstanding this extraordinary Charge, to make use of Scaven-Men and Spade-Men to cleanse the String to Seawards at certain times; and upon the erecting of this last Mill, *Leverington* also did last Year build another Engine to fling the Water into the same Drain.

I reckon both these Engines for *Tidd* and *Newton* Low-lands, being 2150 Acres, or thereabouts, will cost one Year with another, one Shilling an Acre, which is 107 *l.* 10 *s.* a Year. Witness my Hand,

December 6, 1709.

*Edward Dampson.*

December 6, 1709.

The Certificate of *Thomas Gunthorp*, who has for many Years liv'd near the Goats or Gools of *Buckworth's*-Drain and *Shire*-Drain.

The Waters of the Low-lands of *Leverington*, *Newton*, and *Tidd St. Giles* are flung by 4 large Engines into a Drain call'd *Buckworth's*-Drain, which has its Sluce near to *Shire*-Drain-Slucce. The String of *Buckworth's*-Drain to Seaward, is about 300 Foot in length, after which it joyns with the String of *Shire*-Drain,



*Drain*, and so the united Stream of both Strings runs into *Wishbeech-River*. Now I do certifie, That three of these Engines have been set up for some Years past (the fourth being but lately erected) and yet for all that a great Number of Spade-men, sometimes near 30, have been frequently employ'd to clear the String even of the united Stream. And I do further certifie, that the said string of 300 Foot belonging to *Buckworth's-Drain* has been often silted up, since the Erection of the 3 abovementioned Engines; so that several Workmen with their Spades and Scavens have actually several times thrown the Silt out of the said 300 Foot of String before the Engines could run the least drop of Water to Sea. Witness my Hand,

Thomas Guntborp.

*Dampson* was imploy'd by Mr. *Trafford* for 9 or 10 Years together, in gathering the Rates for the Mill, and *Cunthorp* has liv'd for a great many Years near *Shire-Drain-Sluce*, and *Buckworth's-Drain-Sluce*.

1. It is observable from *Dampson's* Certificate, That one Engine alone has in 13 Years time, cost very near 3000*l.* and that what belongs to both of them, as Repairs and Tendance, &c. will be a yearly Charge of 107*l.* 10*s.*
2. It is observable from *Dampson's* and *Guntborp's* Certificates, that notwithstanding the great Height which three of these Engines raise the Waters in the same Drain: Yet they are forc'd to imploy great numbers of Men to open the String of the Drain to Seawards.
3. It is observable from *Dampson's* Certificate, That there are no more than 2150 Acres which pay to these Mills: and he told me that there might be about 200 Acres of Common Drovers, &c. which did not pay; so that the whole Extent of Grounds to be Drain'd by two of the Engines is scarce 2400 Acres.

*Quere,* Whether (these Things considered) it be worth the while for the Country of *Marsh-land* to lay out 900 or 1000*l.* upon two Engines, and 4 or 500*l.* upon sinking the Gool, and to be at a yearly Charge of 107*l.* 10*s.* besides sinking the Interest of 14 or 1500*l.* And all this Expence to keep the said Country in the same Condition it is now in.

*Quere,* Or whether it be better to lay out 8000*l.* to Drain the Country Effectually, as the following Certificate of the Surveyors will make it appear a new Cut will, viz.

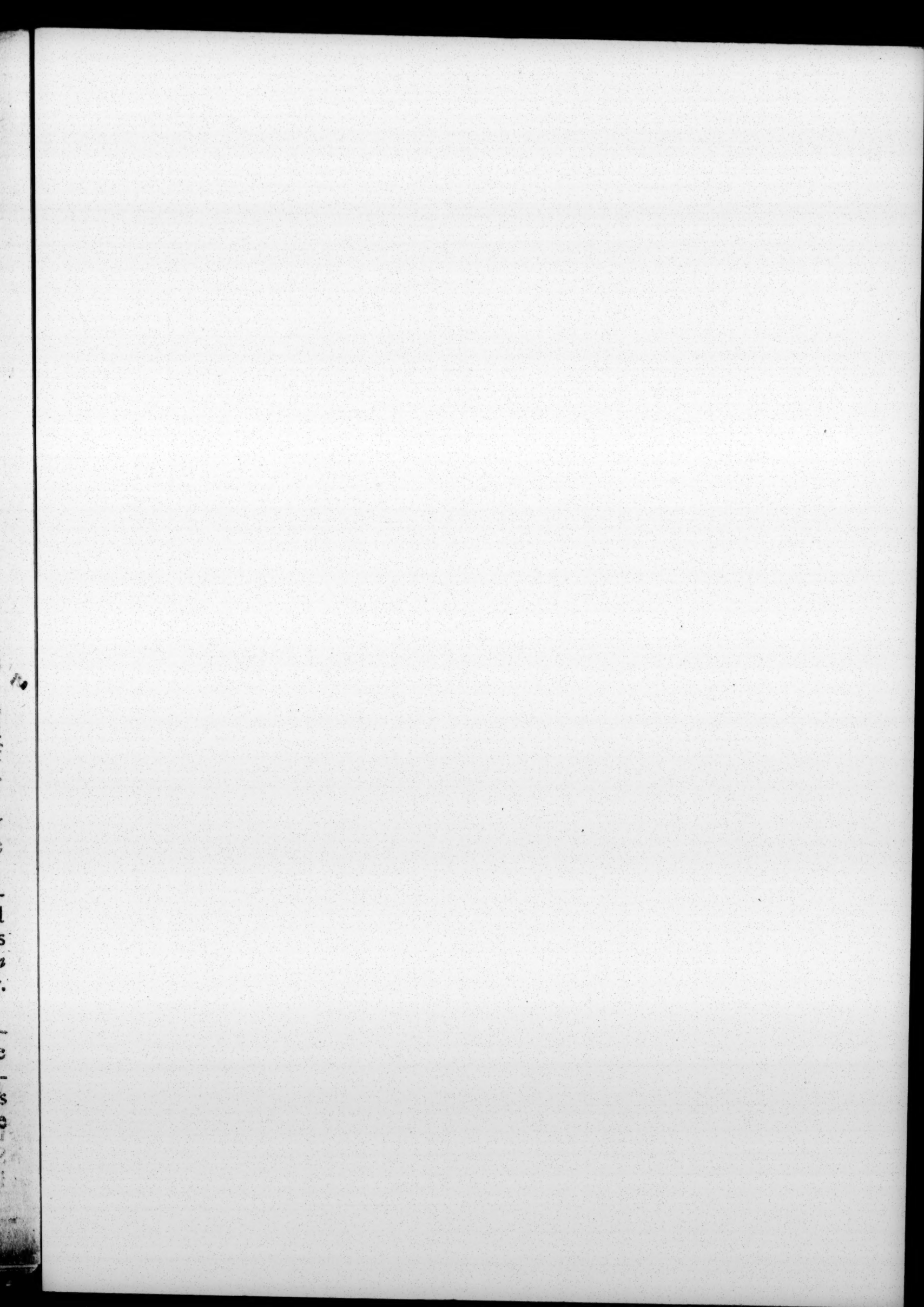
*Novemb. 4, 1709.* I Levelled from *Knight's-Gool* down about half a Mile below *Old-Lyn*, and there was better than 9 Foot Fall at Low-Water-Mark, and the People there did affirm, That the Low-Water-Mark, at a Spring-Tide, is deeper by 2 Foot: And I do also Certifie, that the Water in *Marsh-land-Fen* was but 5 Foot deep in the deepest part of it. Wit. my Hand, *Will. Newling.*

To conclude all, I do Affirm, and will Demonstrate it to any Man of common Sense, that the Design of raising the Water, and so running to Sea at the same time, that the Water shall naturally run to Sea in the same Drain, is impracticable. My meaning is, That the Water thro' the design'd penn'd Doors cannot Naturally run to Sea at the same time that the Engines do run, if the Engines do raise the Water above the Level of the Fen.

F I N I S.









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